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Elements of Local Agroecology

FARMING WITH NATURE, NOT AGAINST IT





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Executive Summary

Transitioning from Food Security to Nutrition Security: Feeding Well, Living Healthy

This 12-page flipbook is designed as a behaviour change and systems-awareness tool for frontline functionaries and communities. It explains the critical transition from a narrow focus on food security—ensuring sufficient calories to prevent hunger—to a broader, outcome-oriented understanding of nutrition security, which encompasses dietary diversity, micronutrient adequacy, safe water and sanitation, access to health services, and positive health outcomes across the life cycle.

The context setting is done by establishing the historical emphasis on calorie sufficiency through staple grains and public distribution systems. While this approach has been essential in reducing hunger, the narration has been switched to nutrition security, demonstrating that adequate calories alone do not guarantee good health. Through relatable examples, it has been highlighted how monotonous diets, limited access to seasonal foods, poor water and sanitation conditions, and intra-household inequalities contribute to hidden hunger—micronutrient deficiencies that impair growth, immunity, learning, and productivity, particularly among women, adolescents, and children.

The concept of nutrition security is then introduced as a multidimensional framework that integrates diverse and adequate diets, clean water and hygienic environments, micronutrient supplementation, and accessible health services. It has been tried to visually and conceptually connect these elements, emphasizing that nutrition security is achieved not only through what people eat, but also through the conditions in which they live and the services they can access.

Moving beyond individual behaviour change, it has been suggested to use this flipbook to position nutrition within broader food, agriculture, market, and community systems. It highlights the role of diversified agriculture, functioning local markets, and responsive health and nutrition services in enabling households to make nutritious choices. Importantly, it positions frontline functionaries not as instructors, but as facilitators of collective, community-level action.

The final section translates this understanding into four simple, achievable community actions—growing food together, planning local foods seasonally, cooking and learning together, and maintaining clean environments. These actions reinforce participation, local ownership, and sustainability, while remaining aligned with existing frontline workflows and government programmes.

Overall, the flipbook has been designed in a manner to serve as a practical communication and mobilization tool that strengthens understanding of nutrition security as a shared responsibility—linking farms to markets, plates to health, and individual choices to community systems. It supports the shift from measuring success by food availability alone to measuring it by healthy, resilient, and well-nourished people.



How to Use This Flipbook

This flipbook is designed as a facilitated discussion tool. Facilitators should use it to guide conversations, encourage reflection, and link everyday experiences with nutrition concepts.

- Show and use one page at a time, allowing discussion before moving ahead.
- Use the illustrations to start dialogue.
- Ask open-ended questions and encourage participants to share local examples and experiences.
- Adapt the pace and emphasis based on the audience and context (home visits, group meetings, community events).

The flipbook works best when used interactively, focusing on understanding and collective action rather than one-way messaging. Use this flipbook to guide discussion and agree on collective nutrition actions for the village.

Facilitator's Note

This flipbook helps you discuss simple, nature-friendly farming practices with local communities. Ensure you have a comfortable, quiet place to meet before you begin.

- Read about agroecology and the topics in this flipbook so you can answer questions or guide people to more information if needed.
- Before you begin, encourage people to share their farming or livelihood experiences. This helps start discussion and gives useful insights for later.
- Many people may not read or write easily. Use pictures to start conversations. Ask questions and listen carefully.
- Go slowly, use local language and examples, and connect ideas to daily life. Repeat important points and check understanding by asking questions.
- Encourage sharing and keep the discussion on track. If someone raises another topic, do not dismiss it—note it with their name and return to it later.
- Create an open and honest space. Avoid one-way teaching—there are no "wrong" answers. Learn together.
- Your role is to guide discussion, build confidence, and support small, practical changes that strengthen farms and communities.
- Together, learning and sharing can build stronger communities and more resilient farms.



What is Agroecology (कृषि पारिस्थितिकी)

"Let's talk about Agroecology. What does it mean?"
"Agroecology is just a way of farming that works with nature, not against it. It means we treat the farm like a living system—where soil, water, plants, animals, and people all depend on each other. In other words, Agroecology is a sustainable approach to producing food that treats a farm like a natural ecosystem, balancing the needs of people, soil, plants, animals, and the environment."

"Now think about this: When we take care of the soil, and water that our crops drink eagerly, what happens to our crops?" (Wait for responses.)

Yes—crops become healthier.

Discuss people's responses using the image to highlight the interrelationship between man, farms and nature.

Why is Agroecology important for us?

"First, our environment.
If we farm in a natural way, we protect our soil, our water, our forests. We reduce pollution and keep the land healthy for our children.

Second, our food.
When we grow food in this way, it is safer and healthier for our families. And we protect all living things around us.

Third, our livelihoods.
Good farming practices can help us sell our produce—both in local markets and outside. This can improve income for farmers and others in the village.

Finally, resilience.
Weather is changing—sometimes too much rain, sometimes too little. Practises under Agroecology helps farms survive these changes and reduce losses.

In short, **Agroecology helps us understand what deeply affects our farms, rural activities and rural people's lives, and that knowledge helps do something about it."**
If there are questions or points raised by the audience, answer them and then ask:

Ask: "Let me ask you: What changes have you seen in weather or farming in recent years?"
(Invite discussion and link it to changing weather and challenges farmers face everywhere.)

Close with: "For those of us who depend on the land, we cannot run from these changes. We must adapt. Agroecology helps us farm with nature and be better prepared for the challenges ahead."



Elements of Local Agroecology for Farm and Rural Communities

Diversity (Crop, Livestock and Local Ecosystems)

Ask: "Let's talk about diversity of life, on and around our farms. What does that mean?
It means having many kinds of crops, small organisms in the farm soil, animals, birds, trees, and wild plants around—not just one, or a few.

When we see different kinds of birds, insects, grasses, and trees growing well around us and the water is clear and flows well, it tells us our land is healthy."

Ask:" Think about this: Have you noticed certain trees or plants that bring more birds or bees? Which are those?" (Wait for responses.)
Explain: "Trees like Palash, Karanj, and Bael (पलाश , करंज, बेल or बिल्व), wild plants like Ghumchi or Chirmi (घुमची, चिरमी), Gorakhbuti (गोरखबूटी), Dronapushpi or Guma (द्रोणपुष्पी, गुमा) and grasses like Durva and Khus (दूर्वा, खस) help keep the soil strong, healthy and hold water. They bring bees, butterflies and useful insects, and birds come to eat harmful pests."

"If we use local seeds, grow different crops, and keep desi animals, our farm becomes healthier. Most things—waste, manure, fodder—stay on the farm and are reused, like a cycle wheel that keeps turning."

"Next, we will understand what is biodiversity (जैविक विविधता) and an ecosystem (पारिस्थितिकी तंत्र)
"Biodiversity simply means all living things—plants, animals, birds, insects—living in their natural places and helping each other. And remember, we are also part of this—not separate from nature."

Ask: And what is an ecosystem?
"It is like a community, a team—soil, water, air, plants, animals, and people—all helping each other. In nature, everyone depends on each other, so no single group can dominate, take over everything."

Ask: Think back to the times of Covid. What happened when nature forced us to slow down?
(Invite sharing. Discuss the helplessness felt across the world. How it showed humanity our dependence on nature and each other—but now we are forgetting it, again.)

Ask: "So, tell me: how are we treating other living beings on our planet?"
(Wait for responses. Ask: can this have no effects? Link it to daily life—like plastic waste. It returns to us in our blood, heart, kidneys through soil, water, and food as micro-plastics and harms our health.)

Ask: "What different wild plants, animals, birds, or trees do you see around your farm?"
(Encourage sharing. Ask them to observe more, and think: How can we help them grow and live well?)

Facilitator's Note: As you explain these elements of Local Agroecology, ask the participants to share examples of each, based on their understanding, experience or knowledge. Some examples are provided for reference. The Facilitator can add more and build on participant's examples.



Soil Health Improvement

Let's talk about our soil. What makes farm soil healthy?
"Good soil is alive—it has earthworms, small insects, and tiny living things we cannot see. If we take care of them, they all give us better crops."

How do we care for them?
"They need a little moisture and food like dry leaves, plant waste, and other things that rot. They turn all this into rich soil, like we see in the forest. They work for us for free—if we let them live in our soils."

Ask: "Think about this: Have you seen soil in the forest? Is anyone adding fertilizer or tilling there? (Wait for responses.) **Still, the soil is rich. Why?**

Ask: Can we make our farm soil like forest soils? How?
(Invite ideas, and sum up by pointing the important role of a healthy soil.)
"Good, living soil gives us healthy, strong crops and trees. The food we get from it, is very helpful for us. But when we use chemicals, these small living things die. The soil becomes weak, and we need more and more chemicals every year. This never ends. No wonder, farmers keep buying every year, and still are dissatisfied- for their soils are dead."

Recycling Nutrients

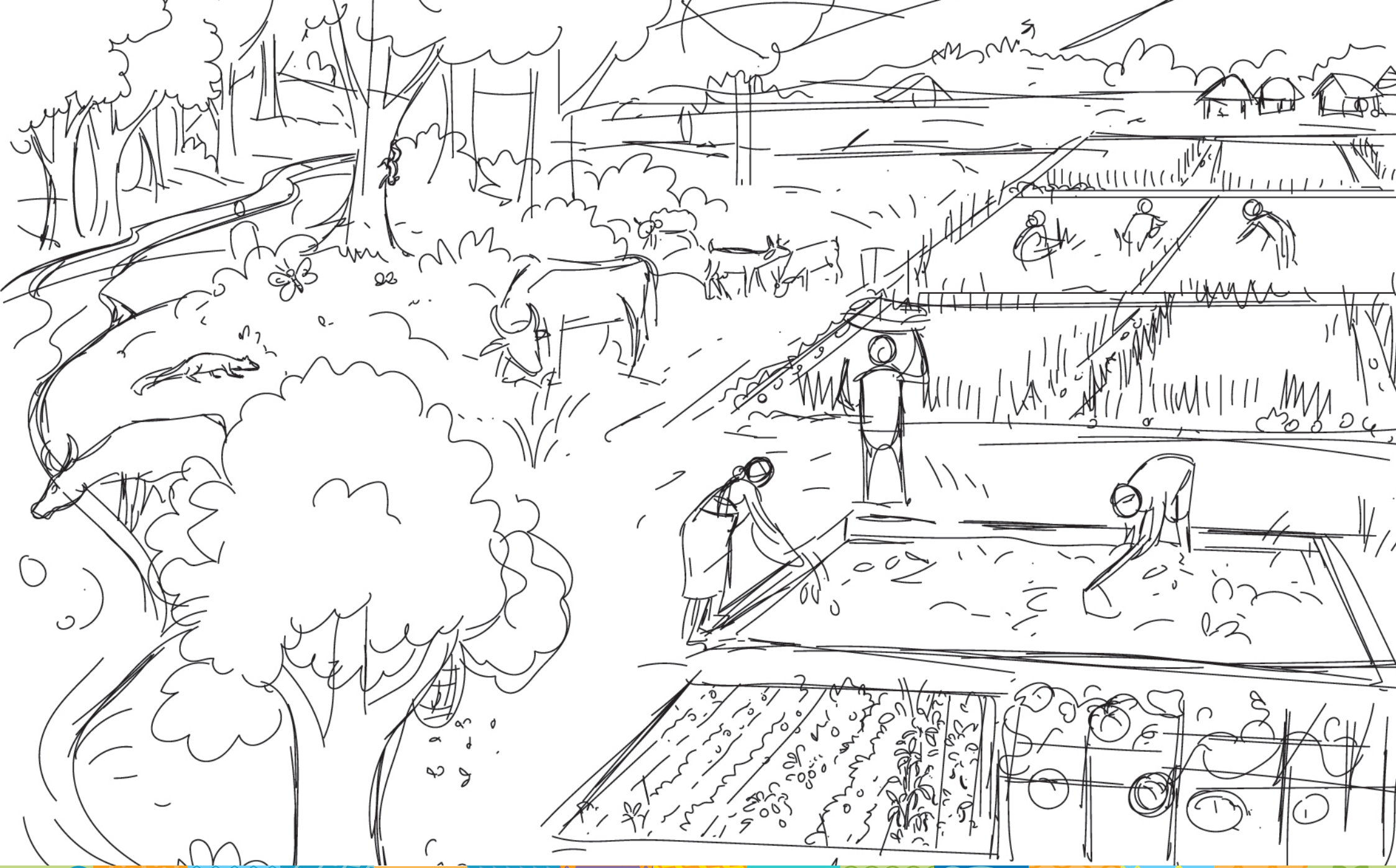
Now let's talk about waste. Is anything really waste?
"In Nature, nothing goes waste." (Pause and let them think, ask and give examples, if not clear). "Things like cow dung, crop leftovers, kitchen waste, bathwater, even pond water—these can all be useful on the farm."

Ask: "What do you usually do with crop waste, kitchen scraps or animal waste?"
(Invite sharing.)
"We can turn these into compost, natural fertilizers, and pest medicines. Dry leaves and crop waste can cover the soil (mulch), keeping moisture locked in and preventing weed growth, and make the soil fertile."

"So, remember: **On the farm, nothing should go to waste**—everything can be used again to make the soil stronger, and it also cuts down costs for us."

"Use cow dung and urine, crop waste, kitchen scraps, and pond water to make compost and plant tonics. Soak dried powder of Neem leaves, pounded chilli-garlic with some oil, little buttermilk and little soap solution, for 24-48 hours. Stir once-in-a-while and filter after 24-48 hours. Dilute in water and spray regularly to control pests. There are many techniques like these that people follow on farms and gardens, and you can get the exact proportions online or at institutes that teach this."

(Here, if you know of some local institute, provide its details.)



Biological Pest Management

"Let's talk about pests. How can we control them without chemicals?
We can work with nature—use trap crops, homemade sprays, and helpful birds and insects. Trap crops attract pests away from the main crop and specific ones. Example marigold or mustard are planted on the field border to draw away pests from the main crop."

Ask: "Think about this: Do you see birds sitting around your fields? What do they eat?"
(Wait for responses.)
"True, some birds eat grains, but most birds eat insect pests. If we put sticks or perches in the field, birds can sit and hunt for these insects that destroy your crops."

"Maintain big trees around your farm. This helps birds like owls (उल्लू, घुघु) and other birds build a home. One pair of owls can eat thousands of rats in a year and save our crops. Hawks, kestrels (तुत्तर, खरौंच, बाज़), coucals (महोख, भारद्वाज), hornbills (भात बलि, धनेश) also finish off mice and rats. They feel safe on big, tall trees and will come frequently. Bats (चमगादड़) and other birds also eat insects and mosquitoes."

"Insects like dragonflies (भँभीरी, व्याध पतंग, हेलीकॉप्टर) eat many plant pests as they fly in the air –aphids (माहू, चेपा, तेले) whiteflies (सफेद मक्खी), that suck plants dry, midges (छोटा मच्छर, मशकाभ) and beetles (गुबरैला) that damage crops. Unfortunately, the pesticides, fertilizers and chemicals we use flows into ponds with water, killing the young ones of dragonflies."

"So, what do we learn? If we protect these helpers, they protect not just our farm, but our families too.".

Ask: "What can we do on our farm to bring more birds and helpful insects?"
(Encourage discussion. Ask what pests or animals harm their crops.)

If they mention wild animals like boar, deer, or elephants damaging crops or leopards causing problems, say: We should work with the forest department in such cases. Also remind them: as forests shrink due to human activities and water sources disappear, these animals come to our farms and habitations, especially in summer.



Seed Saving and Sovereignty (बीज संप्रभुता)

"Let's talk next about seeds– and with that we also mean the varieties of food crops that come from these seeds. Who controls our seeds?"

Ask: "Do you save seeds from your harvest, or buy them every year?"
(Wait for responses. Check with them did their grandparents or their forefathers purchase seeds? How did they manage?)

"When we save our own seeds and share them, we stay independent. We spend less money and don't depend on shops, money-lenders or companies."

"In simple words: Seeds are our right–we can save them, use them, share them."

"Seed Sovereignty (बीज संप्रभुता) in simple words, is a farmer's right to save, use, breed, exchange or sell seeds (or plant varieties). Some seed companies prohibit this practice to ensure farmers continue purchasing seeds, all their lives."

"Think about this example:
Women farmers from Surguja, Chhattisgarh saved a unique aromatic rice called Jeera-Phool. By working together, and with the help of the local administration they registered it with a GI (geographical indication) tag in March 2019, and protected it, Since the rice got a GI tag, only their area can sell it by that name for the next 10 years.

In Jodhpur, Rajasthan, farmers are bringing back old bajra varieties – Pili Bajri, Moochwali Bajri and Sulkhaniya Bajri. All these seeds are very resilient, productive in dry conditions and known in these areas for generations."

Ask: "What seeds, plant varieties are unique to your region?"
(Gather responses and see if they or others are preserving them. If not, encourage saving and propagating these local varieties before they are lost forever.)

Co-creation of Knowledge

"After covering saving seed varieties, now let's talk about learning and working together."
"Can one farmer do everything alone?" (Wait for responses.)
"No–we learn from each other. Share seeds, ideas, and ways of farming."
"If one farm uses chemicals, it can affect nearby farms too. So, we must work together."

"So, what do we learn? When farmers come together, save seeds, and share knowledge, they protect their land, their crops, and their future."

Ask: "Apart from seeds, what else can we start sharing with each other?"
(Encourage discussion.)

"The Jeera-Phool rice from Surguja, Chhattisgarh and local Moochwali Bajri, Pili Bajri and Sulkhaniya Bajri of Jodhpur were not created by one person. They resulted from many generations of farmers sharing seeds, storage methods and farming knowledge. Saving local seeds, natural systems and indigenous knowledge, requires everyone working together".



Social Values & Diets

"Let's now talk about food. What do we eat, and why?"

"What did our elders eat in the past?"
(Wait for responses.)

"They ate local foods—jowar, bajra, ragi, seasonal vegetables and fruits. Rice and wheat were rare treats. Food was fresh, simple, and healthy. "Think about today—Are we eating the same foods, or has it changed?"

(Invite sharing.)

"Many foods like tomato, chillies, potatoes and even tamarind, came to India from outside just 200 years ago or more. Today, our meals are incomplete without them. How did it change? People shared seeds, plants, vegetables, fruits and cooking ideas—and food habits changed."

"So, what do we learn? Our food and tastes keep changing, but we should not forget our local, healthy foods. **Most importantly: Everyone in the village and region—rich or poor—should get fresh, healthy, seasonal food."**

Ask: "What local foods do you still grow or cook? Can we grow and share more of these?"
(Encourage discussion.)

Close with: "When we grow local food without using chemicals on our farms, and share knowledge, we keep our families healthy and our traditions alive."



Practices Suited for Indian Context

Facilitator's Note: This section aims to show the audience that these practices are real and practical—farmers in India are already following them, and everyone can learn from them.

Zero Budget Natural Farming (ZBNF)

"Let's talk about natural farming. Can we farm with little or no cost using things around us? There is a way called **Zero Budget Natural Farming**."

Ask: "Do we spend a lot on seeds, fertilizers, and chemicals against pests?"
(Wait for responses.)

"Zero Budget Natural Farming says—we can reduce this cost and farm with nature. It has four simple ideas:

- Treat seeds with Beejamrit before sowing.
- Feed the soil with natural mixtures such as Jeevamrita.
- Keep soil covered with dry leaves or crop waste (Acchadana).
- Ensure the right moisture-level in the soil (Whapasa)."

"What does this give us? Healthy soil, strong crops, and less spending. Many farmers in different states are already following this".

(If someone asks for details, tell them that close to 1 lakh farmers or more are practising this each in Himachal Pradesh[1], Karnataka Maharashtra and other states. Learn about ZBNF from Shri Subash Palekar of Amravati, Maharashtra, at https://palekarzerobudgetspiritualfarming.org/contact.html. There are YouTube videos by Shri Palekar and other practitioners too).

[1] Under the *Prakritik Kheti Khushal Kisan* scheme

Natural Farming

"Now let us talk about natural farming in general."

- "No chemicals—only natural inputs for a 'living soil'. Use compost, cow dung, plant mixes.
- Treat your seeds, and sow them with the first pre-monsoon showers so crops grow early.
  Keep the soil covered with crop waste, grow different crops **together** (inter-crop diverse crops) **through the year**. Their shade protects the soil from strong sun, and their roots support soil life.
- Let helpful birds, insects and trap crops help control pests."

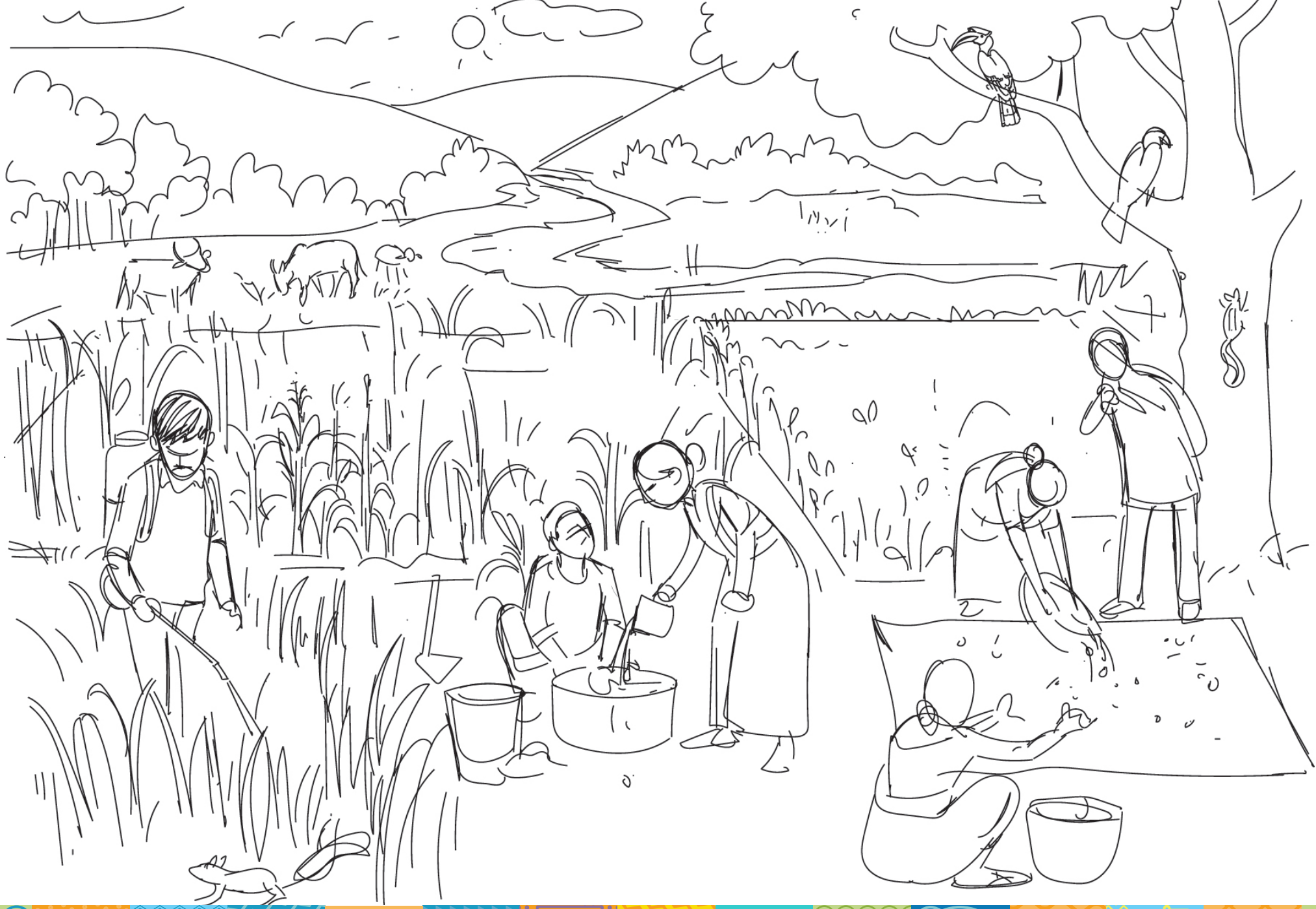
Ask: "What natural things can we use on our farms?" (Invite sharing.)

- "Keep the soil alive—don't leave it uncultivated. **No tilling**, let your crop's 'Living Roots' do the job.
- Grow crops all year, and grow many crops together.
- This gives food and income in every season and protects us in bad weather.
- Keep animals, trees, even small kitchen-gardens. Their waste and shade help the farm."

"So, what do we learn? **If we work with nature**, we spend less, earn better, and keep our land healthy and also our families become healthy eating safe, chemical-free food."

Ask: "Who would like to try this on their farm- even on a small patch, if not the entire farm?"
(Encourage discussion.)

Tell them about the APCNF program in Andhra Pradesh, where communities and experts work to support natural farming. Over 18 lakh farmers practice it on 20 lakh acres. Even small and tenant farmers in arid regions are growing healthy food on very small plots or kitchen-gardens, for their families, by following what was taught. Learn more at https://apcnf.in/ or watch APCNF videos, testimonies of farmers on YouTube.



Agroforestry (कृषि वानिकी) – Integrating natural systems

"Let's talk about growing more on the same land—having trees, vegetables, fruits, medicinal plants, fodder plants together."

"Agroforestry means growing crops, trees, flowers, fruit trees and managing animals together. (पेड़ों पर आधारित खेती)"

Ask: "Do you have trees on your farm? What do they give?"
(Wait for responses.)

"Trees give fruits, wood, fodder, and shade. We can grow crops between trees. As trees grow bigger, we can grow fodder or shade-loving crops. We can also keep animals, bees, or even a small fish pond. This gives more food, more income, and keeps the soil healthy."

Examples: "In Kerala, farmers grow coconut, mango, and jackfruit and other trees, with vegetables and spices like pepper. In the North East, where it is hilly, many trees – papaya, mango, moringa, lemon are grown with vegetables, ginger, herbs, in layers on the hillside."

For those interested to know more, point them to ICAR-Central Agroforestry Research Institute (CAFRI), UP at https://cafri.res.in/ or the Forest College and Research Institute, TNAU at https://agritech.tnau.ac.in/forestry/forestry_contactus.html. There are short videos of experiences of farmers from India, on YouTube.

Non-Chemical Farming or Non-Pesticidal Management (NPM)

"Now as we end our discussion on different practices in India, let's talk about starting small, without chemicals."

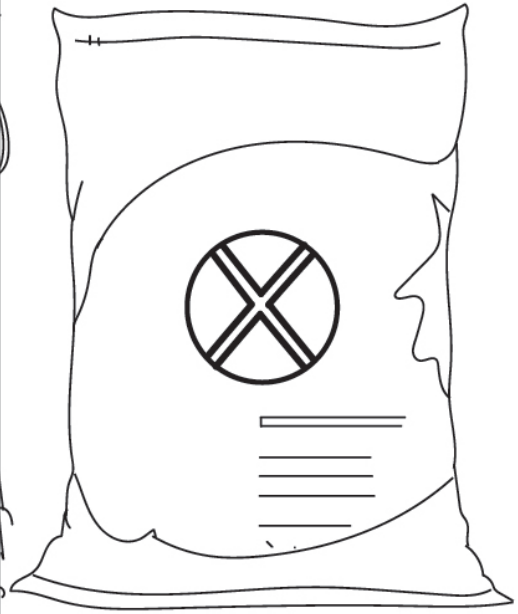
"Try natural farming on a small part of your land- begin small. Don't use chemicals—use cow dung, urine, and farm waste."

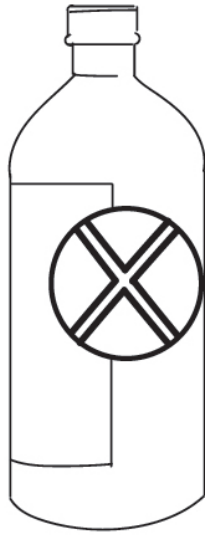
Ask: "Can we try this on a small patch first?"
(Invite responses.)

"As you learn and practice, your confidence will grow to do it on a bigger area, just as the others now practicing natural farming. This reduces cost, avoids debt, and keeps soil and crops healthy."

"So. what did we learn? **Grow different things together, work with nature, not against it. Start small, and learn by doing."**







Benefits for Farmers

"Let's talk about benefits for farmers."

- "You use what you already have on the farm—no need to buy costly inputs.
- Soil becomes rich, soft with humus and strong over time. You will notice it is "more alive" than the soil on a chemical farm.
- Crops can handle dry, uncertain weather, and even flooding, better. Many farmers report similar yields as from chemical farming, but spend much less, so earnings improve.
- The food made from your farm is clean, healthy and tastes better too.
- No chemicals—better for your family's health and important when healthcare expenses have become unaffordable."

Some Implementation Steps

"How do we start?"

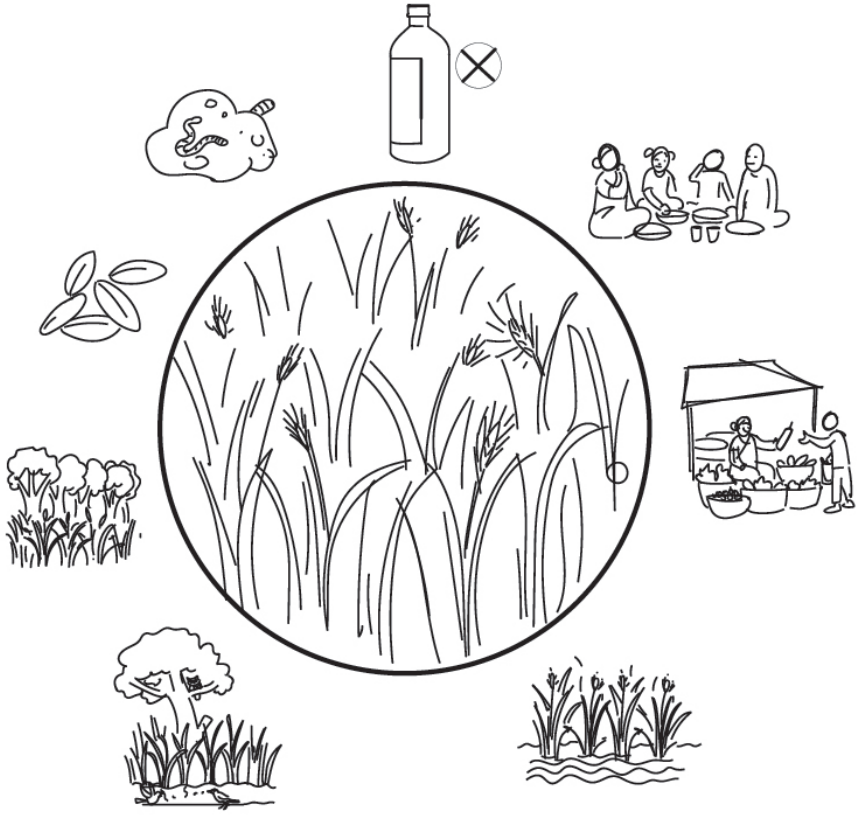
- "Understand your environment: First understand your land—wild plants, trees, insects, birds, animals, soil, rainfall, water sources, ways to save water, and the challenges—you can then make better decisions over time.
- Start Small: Begin on a small portion of the land first—remember no chemicals, at all!
- Community: Join groups, learn from other farmers and local experts.
- Seed Banks: Save and store local seeds with others to ensure easy access to them.
- Crop Rotation, Intercropping: Grow different crops together to improve pest control and soil nutrition.
- Local markets: Sell produce in nearby towns, work with other farmers, and reach out to families, shops, and hotels who want good, natural food."

Ask: "We are now almost at the end of our session; do you have any questions?"
(Answer queries patiently and go over points that weren't clear.)

"In closing, remember to start small, learn as you go, and to trust nature, and your farm will take care of you for years to come"

"Remember, Agroecology means farming that cares for nature, treats people fairly, and helps farmers earn well."





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